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BEFORE THE BOARD OF PATENT APPEALS

AND INTERFERENCES

Application Number: 10/662,917

Filing Date: September 15, 2003

Appellant(s): JAMI ET AL.

David M. La Bruno

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 04/06/2010 appealing from the Office action mailed 11/25/2009.

(1) Real Party in Interest

A statement identifies by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

Claim 1 was added a minor feature, i.e., "said mode determined" that helped clarify for the claimed language and the amendment after final had been considered and entered by the examiner.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the ground of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Prior art references Winberg (GB 2369003), Helmerson (WO 02/067606) and Vialen (US Patent 6,978,143) have been used as relied evidence in the rejection 11/25/2009.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3, 5-8 and 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winberg (GB 2369003) in view of Helmerson (WO 02/067606) and further in view of Vialen (US 6,978,143).

Consider claim 1 (Previously Presented), Winberg discloses a method of transfer of a call connection connecting a telecommunications base station and a mobile user terminal between dedicated channels in both directions therebetween and shared channels in both directions therebetween (see Winberg, the abstract), comprising:

determining amount of data buffered at the base station and the user terminal for transmission therebetween and/or the rate that data arrives at the base station and the user terminal for transmission therebetween (Winberg, page 2 lines 23-30, page 4 lines 20-25, page 5 lines 15-30, determining switching between channels based on the data buffer level measurements);

determining a value of a measured parameter of the signals between the base station and the user terminal (Winberg, page 2 lines 20-30, page 4 lines 12-18); and

deciding to make the transfer, dependent upon said value and upon said amount or rate (Winberg, page 2 lines 23-30, page 4 lines 20-25, page 5 lines 15-30, page 7 lines 20-21, the RNC making decision for switching based on traffic volume measurements, data RLC buffer levels, etc.,);

Winberg does not show signal attenuation or propagation delay, but it is noticeable Winberg discusses signaling load on the network that cause channel switching (see Winberg, page 7 lines 20-21). Helmerson discloses signal attenuation or propagation delay (see Helmerson, page 11 lines 27-31, page 12 lines 20-31, page 13 lines 1-3). Since both Winberg and Helmerson teach system and method for channel allocation, channel switching, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Winberg teaching, and have signal attenuation or

propagation delay, taught by Helmerson, to improve the system and method for facilitating resource allocation, as discussed by Helmerson (see Helmerson, page 1 lines 5-29, page 3 lines 1-31, page 4 lines 1-31 and lines 5 lines 1-20).

Winberg as modified by Helmerson, does not teach a shared channel in a mode in which an acknowledgement is required. Vialen teaches a method and system for management of packet data transfer in a UMTS system, where Vialen teaches the system makes a decision for uses of common channel or dedicated channel based on acknowledgement received in common channel FACH/RACH (see Vialen, col 2 lines 55-67), thus Vialen discloses a shared channel in a mode in which an acknowledgement is required. Since Winberg, Helmerson and Vialen teach methods and systems for channel management and channel switching in UMTS systems, thus it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify teachings of Winberg and Helmerson, by combining teachings of Vialen of acknowledgements are received in a common channel for determination of channel switching between common channels and dedicated channels that makes the channel transfer between common channels and dedicated channels faster and available to all mobile stations in the system (see Vialen, col 1 lines 45-67, col 2 lines 1-67, col 3 lines 1-3).

Consider claim 6, (Previously Presented) Winberg discloses a telecommunications system comprising a base station and a mobile user terminal, the base station and the user terminal being in use in call connection over dedicated channels or shared channels (see Winberg, page 1 lines 10-33),

the base station comprising decision means, a channel allocator, and a processor (Winberg, page 1 lines 10-33, page 5 lines 15-28),

the decision means being operative to control transfer of the call connection by the channel allocator between the dedicated channels and the shared channels dependent upon (Winberg, page 2 lines 10-30, page 3 lines 28-32, page 4 lines 1-6):

a first input signal to the decision means indicating the amount of data buffered at the base

station and the user terminal for transmission therebetween and/or the rate that data arrives at the base station and the user terminal for transmission therebetween (Winberg, page 2 lines 23-30),

a second input sisal to the decision means indicating the value of a measured parameter of the signals between the base station and the user terminal, the parameter being the parameter value being determined by the processor (Winberg, page 2 lines 20-30, page 4 lines 12-18).

Winberg does not show signal attenuation or propagation delay, but it is noticeable Winberg discusses signaling load on the network that cause channel switching (see Winberg, page 7 lines 20-21). Helmerson discloses signal attenuation or propagation delay (see Helmerson, page 11 lines 27-31, page 12 lines 20-31, page 13 lines 1-3). Since both Winberg and Helmerson teach system and method for channel allocation, channel switching, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Winberg teaching, and have signal attenuation or propagation delay, taught by Helmerson, to improve the system and method for facilitating resource allocation, as discussed by Helmerson (see Helmerson, page 1 lines 5-29, page 3 lines 1-31, page 4 lines 1-31 and lines 5 lines 1-20).

Winberg as modified by Helmerson, does not teach a shared channel in a mode in which an acknowledgement is required. Vialen teaches a method and system for management of packet data transfer in a UMTS system, where Vialen teaches the system makes a decision for uses of common channel or dedicated channel based on acknowledgement received in common channel FACH/RACH (see Vialen, col 2 lines 55-67), thus Vialen discloses a shared channel in a mode in which an acknowledgement is required. Since Winberg, Helmerson and Vialen teach methods and systems for channel management and channel switching in UMTS systems, thus it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify teachings of Winberg and Helmerson, by combining teachings of Vialen of acknowledgements are received in a common channel for determination of channel switching between common channels and dedicated channels that makes the channel transfer between common channels and dedicated channels faster and

available to all mobile stations in the system (see Vialen, col 1 lines 45-67, col 2 lines 1-67, col 3 lines 1-3).

Consider claim 11 (Previously Presented) Winberg teaches a radio network controller (page 1, lines 10-20), comprising:

decision means, a channel allocator, and a determinator, the decision means adapted to control transfer of a call connection via the channel allocator between dedicated channels and shared channels dependent upon (Winberg, page 1, lines 10-30, page 2 lines 10-30):

a first input signal indicating an amount of data buffered for transmission, a rate that data arrives for transmission, or both the amount of data buffered for transmission and the rate that data arrives for transmission (page 2 lines 23-30);

a second input signal indicating a value of a parameter, the parameter being signal attenuation or propagation delay of transmitted signals, the value of the parameter being determined by the determinator (page 2 lines 20-30, page 4 lines 12-18); and

a third input signal indicating whether or not the shared channels operate (Winberg, page 3 lines 1-32, page 4 lines 1-21, discussing different users have different requirements for data transfer frequency and intensity, this may cause channel switching increase rapidly, the RNC determines switching between allocated channels based on relevant parameters, e.g., buffering information), in a mode in which an acknowledgement of receipt is required to be received back before data is assumed to have been correctly received.

Winberg does not show signal attenuation or propagation delay, but it is noticeable Winberg discusses signaling load on the network that cause channel switching (see Winberg, page 7 lines 20-21). Helmerson discloses signal attenuation or propagation delay (see Helmerson, page 11 lines 27-31, page 12 lines 20-31, page 13 lines 1-3). Since both Winberg and Helmerson teach system and method for channel allocation, channel switching, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Winberg teaching, and have signal attenuation or propagation delay, taught by Helmerson, to improve the system and method for facilitating resource

allocation, as discussed by Helmerson (see page 1 lines 5-29, page 3 lines 1-31, page 4 lines 1-31 and lines 5 lines 1-20).

Winberg, modified by Helmerson, does not show a shared channel in a mode in which an acknowledgement is required. Vialen teaches a method and system for management of packet data transfer in a UMTS system, where Vialen teaches the system makes a decision for uses of common channel or dedicated channel based on acknowledgement received in common channel FACH/RACH (see Vialen, col 2 lines 55-67), thus Vialen discloses a shared channel in a mode in which an acknowledgement is required. Since Winberg, Helmerson and Vialen teach methods and systems for channel management and channel switching in UMTS systems, thus it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify teachings of Winberg and Helmerson, by combining teachings of Vialen of acknowledgements are received in a common channel for determination of channel switching between common channels and dedicated channels that makes the channel transfer between common channels and dedicated channels faster and available to all mobile stations in the system (see Vialen, col 1 lines 45-67, col 2 lines 1-67, col 3 lines 1-3).

Consider claims 2, 7, 12, (Original) a method of transfer of a call connection according to claims 1, 6, 11, Winberg, as modified by Helmerson, teaches in which for a shared channel call connection, upon the parameter value being determined as being less than a predetermined threshold, transfer is made to dedicated channels (Helmerson, page 9 lines 14-30).

Consider claims 3, 8, 13, (Original) A method of transfer of a call connection according to claim 1 or claims 2, 6, 11, Winberg, as modified by Helmerson, teaches in which for a dedicated channel call connection, upon the parameter value being determined as being more than a predetermined threshold, transfer is made to shared channels (Helmerson, page 10 lines 4-20).

Consider claims 5, 10, 14, (Original) A method of transfer of a call connection according to claims 1, 6, 11, Winberg, as modified by Helmerson, further teaches in which the shared channels are a

Random Access Channel (RACH) and a Forward Access Channel (FACH), the base station comprises a radio network controller, and the base station and user terminal operate to transfer the call connection in accordance with the Universal Mobile Telecommunication System (UMTS) standard (Winberg ,the abstract, page 3 lines 28-31, page 4 lines 12-18, page 5 lines 6-30).

Consider claim 15, (Previously Presented) The radio network controller according to claim 11, Winberg, as modified by Helmerson, teaches:

a Node B, the Node B responsive to the channel allocator to transfer the call connection between dedicated channels and shared channels (Helmerson, page 3 lines 22-30).

Consider claim 16, (Previously Presented) The radio network controller according to claim 11, Winberg, as modified by Helmerson, further teaches wherein the call connection is transferred in accordance with the Universal Mobile Telecommunication System (UMTS) standard (Winberg, the abstract, page 3 lines 28-31, page 4 lines 12-18, page 5 lines 6-30).

(10) Response to Argument

Claim 1:

The arguments that "The cited Winberg, Helmerson and Vialen fail to teach or suggest the recited feature in claim 1 of determining whether or not the shared channels are in a mode requiring acknowledgement of the data and deciding whether to make a transfer between dedicated and shared channels dependent on the result of that determination", and Vialen fails to teach deciding to make the transfer between channels depending on whether there is an acknowledgment (of receipt of the data) mode and whether that mode is on or off.

The examiner respectfully disagrees because first of all, Winberg teaches and discloses switching between a common channel or shared channel (FACH/RACH) and a dedicated channel DCH based upon parameters such as traffic volumes, data buffer levels and data throughput measurements in the user equipment UE and in the radio network controller (RNC) (see Winberg, page 2 lines 20-30). Further more, Winberg teaches and suggests that the switching between channels based on the

mentioned parameters which are dynamically modified in response to previous passage of data into or out of the user equipment UE (see Winberg, page 4 lines 1-28). The dynamic modification for the parameters includes addition of another parameter such as timer values (see Winberg, page 4 lines 23-24). Winberg discloses the switching between channels more in details in pages 6 lines 14-31 based on these parameters. Helmerson teaches switching between a dedicated channel and shared channel based on link quality of a signal (see Helmerson, page 5 lines 23-30, page 9 lines 14-30). Since Winberg proposed the parameters can be adjusted and modified such as in adding another parameter timer value as discussed in Winberg, therefore it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Winberg' s teachings by incorporating Helmerson' s teachings of switching between a dedicated channel and a shared channel depending on another factor, i.e., the link quality, thus improving method and system taught by Winberg that is now another additional parameter, i.e., the link quality, can be taken into consideration for making decision of switching between channels.

Secondly, for the clarification to the claimed limitation in claim 1 about "determining whether or not the shared channels are in a mode in which an acknowledgement of receipt is required", or in the argument "determining whether or not the shared channels are in a mode requiring acknowledgement of the data", the examiner would like to bring in paragraphs [8]-[9], [13] and [26] from the Application Publication US 2004/0082336 as follows.

[0008] In addition, for Acknowledged Mode services, data transmission on a FACH/RACH channel pair involves large number of acknowledgements being transmitted as part of the Radio Link Control (RLC) behaviour. The RLC is a so-called layer 2 protocol and provides reliable data transfer. Depending on a user terminal terminal's traffic profile there is a certain amount of interference in both uplink and the downlink directions (i.e. to and from the base station) due to the additional acknowledgement messages.

[0009] The FACH/RACH solution is intended for 'bursty', low volume data transfer, while the dedicated channel is intended for high-volume constant data transfer. When a user terminal is sending

or receiving data on the FACH/RACH channels, it is intended that as data volume increases, the user terminal moves from the FACH/RACH channels to the dedicated channel state. Metrics (i.e. measurements are made and used to determine when a user terminal should transition from one state to another, specifically monitoring data rate and buffer occupancy for a given user terminal.

[0013] In these embodiments, for a shared channel call connection, upon the parameter value being determined as being less than a predetermined threshold, transfer is made to dedicated channels; and for a dedicated channel call connection, upon the parameter value being determined as being more than a predetermined threshold, transfer is made to shared channels. The transfer is made also dependent upon whether or not the shared channels operate such that an acknowledgement of receipt is sent on receiving data.

[0026] In a further embodiment, which is a telecommunication system as shown in FIG. 1 but with a further input (not shown) to the decision block 12, if transition to a common channel state from a dedicated channel state is being considered, then the possible increase in (Radio Link Control (RLC)) acknowledgements in the FACH/RACH state is considered. The further input (not shown) receives a signal indicating whether or not acknowledgements are required to be received back before data is assumed to have been correctly received. If the FACH/RACH channel state is in Acknowledge mode (i.e. acknowledgements being required), more traffic will result so remaining in the dedicated state will be relatively more favourable.

From the light in paragraphs above, claim 1 with regarding to the "acknowledgement mode in the shared channels" can be thought of "in Acknowledged Mode services, data transmission on a FACH/RACH channel pair involves in a large number of acknowledgements being transmitted as part of the Radio Link Control (RLC) behaviour. In one example, when transition to a common channel state from a dedicated channel state is being considered, then the possible increase in (Radio Link Control (RLC)) acknowledgements in the common channel FACH/RACH state is considered. The FACH/RACH channel state is known to be in Acknowledge mode (i.e. acknowledgements being required), thus more traffic will result because of the increase in acknowledgements and it will be relatively more

favourable if remaining in the dedicated state or in the dedicated channel. In other words, the acknowledgments are involved in data transmissions in a channel and in one embodiment set out if transition from a dedicated channel to a common channel then that increases in acknowledgements in the common channel, and more traffic is created on the common channel thus it is more favorable to remain on the dedicated channel because the dedicated channel supports high-volume constant data transfer, while the common channel is intended for 'bursty' or low volume data transfer.

In this thought, Vialen teaches decision about whether to use a common channel or a dedicated channel based on a plurality of channel selection parameters such as amount of data buffers in radio link control layer RLC, channel load, packet sizes of data, etc., (Vialen, col 4 lines 1-13), and Vialen teaches and discusses a situation for use of a common channel or a dedicated channel in downlink and uplink depending on acknowledgments transmitted on the Forward link access channel FACH of the common channel (see Vialen, col 2 lines 1-5, lines 60-67). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify teachings of Winberg and Helmerson, by incorporating Vialen' s teachings decision to use a common channel or a dedicated channel based on a plurality of channel selection parameters including acknowledgments transmitted/received on a Forward link access channel FACH of a common channel as an additional parameter thus improving channels controlling intelligently with having more variables that help to refine the system management.

As a result, the invention as claimed reads upon the cited references. Therefore, the examiner contends that the rejections should stand.

For claims 2, 3 and 5 which depend to claim 1 and since the claimed limitations of claim 1 read upon the cited references as discussed and explained above, and the claimed limitations of claims 2, 3 and 5 are met by the citations from the prior art references as shown in the Final Rejection dated 11/25/2009.

For claim 6, the arguments that "The obviousness rejection is improper, because it relies on a combination of Winberg, Helmerson and Vialen to provide a feature of claim 1 not taught or suggested by that combination. The examiner respectfully disagrees because as for the discussion and explanation

above for claim 1, Winberg, Helmerson and Vialen teach and disclose the claimed feature of claim 1.

Claim 6 recites: "the decision means being operative to control transfer of the call connection by the channel allocator between the dedicated channels and the shared channels dependent upon: ...a third input signal to the decision means indicating whether or not the shared channels are in a mode in which an acknowledgement of receipt is required to be received back before data is assumed to have been correctly received."

The examiner respectfully disagrees because the recited limitations of claim 6 are similar to limitations of claim 1, and for claim 6 recites the “decision means” for controlling the transfer of call connections between the dedicated channels and the shared channels. At least reference Winberg teaches and suggests the RNC makes decision to whether or not to perform the switching between channels based on traffic volume measurements, RLC buffer level measurements and data throughputs (see Winberg, page 2 lines 20-25), thus Winberg discloses the decision means as claimed in claim 6. Further, Vialen teaches decision about whether to use a common channel or a dedicated channel based on a plurality of channel selection parameters such as amount of data buffers in radio link control layer RLC, channel load, packet sizes of data, etc., (Vialen, col 4 lines 1-13), and Vialen teaches and discusses a situation for use of a common channel or a dedicated channel in downlink and uplink depending on acknowledgments transmitted on the Forward link access channel FACH of the common channel (see Vialen, col 2 lines 1-5, lines 60-67). Therefore, the combination of Winberg, Helmerson and Vialen teach and disclose the claimed feature of claim 6.

Therefore, the examiner contends that the rejections should stand.

For claims 7, 8 and 10 which depend to claim 6 and since the claimed limitations of claim 6 read upon the cited references as discussed and explained above, and the claimed limitations of claims 7, 8 and 10 are met by the citations from the prior art references as shown in the Final Rejection dated 11/25/2009.

For claim 11: the argued features, i.e., the obviousness rejection is improper, because it relies on a combination of Winberg, Helmerson and Vialen to provide a feature of claim 1 not taught or suggested by that combination. The examiner respectfully disagrees because as for the discussion and

explanation above for claim 1, Winberg, Helmerson and Vialen teach and disclose the claimed feature of claim 1.

Claim 11 recites: "decision means, a channel allocator, and a determinator, the decision means adapted to control transfer of a call connection via the channel allocator between dedicated channels and shared channels dependent upon:... a third input signal indicating whether or not the shared channels operate in a mode in which an acknowledgement of receipt is required to be received back before data is assumed to have been correctly received."

The arguments for claim 11, i.e., the cited Winberg, Helmerson and Vielen fail to teach or suggest the recited feature in claim 6 of an input signal indicating whether or not the shared channels are in a mode requiring acknowledgement of the data and the decision means deciding whether to make a transfer between dedicated and shared channels dependent on the result of that determination.

The examiner respectfully disagrees because Vialen teaches decision about whether to use a common channel or a dedicated channel based on a plurality of channel selection parameters such as amount of data buffers in radio link control layer RLC, channel load, packet sizes of data, etc., (Vialen, col 4 lines 1-13), and Vialen teaches and discusses a situation for use of a common channel or a dedicated channel in downlink and uplink depending on acknowledgments transmitted on the Forward link access channel FACH of the common channel (see Vialen, col 2 lines 1-5, lines 60-67). Therefore, the cited Winberg, Helmerson and Vialen teach and disclose the claimed features of claim 11.

As such, the examiner contends that the rejections should stand.

For claims 12 to16 which depend to claim 11 and since the claimed limitations of claim 11 read upon the cited references as discussed and explained above, and the claimed limitations of claims 12 to16 are met by the citations from the prior art references as shown in the Final Rejection dated 11/25/2009. Therefore, the examiner contends that the rejections should stand.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Huy C Ho/

Examiner, Art Unit 2617

Conferees:

/Patrick N. Edouard/

Supervisory Patent Examiner, Art Unit 2617

/George Eng/

Supervisory Patent Examiner, Art Unit 2617